MUMBAI

American Center Bulletin

LIFESAVING VACCINES

Vaccines can prevent disease, prolong life, and even eradicate scourges that have plagued people since prehistory. Knowledge of vaccine effectiveness is decades old, but children in developing nations are still dying from vaccine preventable diseases. In this issue, we focus on the efforts of the United States and its international partners who have been working together for more than 30 years to expand the benefits of vaccines to children everywhere.

The Promise of Vaccines

Prevention is the way to wellness. That's why vaccines are so important. Not only can they prevent temporary discomfort and even permanent disability, they can eradicate disease and even prevent death.

Since Edward Jenner began inoculating against smallpox more than 200 years ago, vaccines have literally saved millions of lives. They have completely eliminated smallpox as a naturally occurring disease threat. They have made once common diseases like measles and polio uncommon – or nearly nonexistent – in the countries where they are widely used. Vaccines can even prevent some types of cancer. And U.S. scientists are continuing to develop new vaccines against many other well-established diseases and emerging threats.

The United States remains committed to developing new vaccines and spreading their benefits to those in need.

Vaccines developed by U.S. researchers against one bacterium (*Haemophilus influenzae* type b, or Hib) have virtually eliminated a leading cause of severe pneumonia, meningitis, and long-term disabilities among children in developed countries. Studies have confirmed their safety and effectiveness in developed countries. Broadening the distribution of the Hib vaccines promises to reduce the global burden of infections from that bacterium, which causes 2-3 million cases of serious disease and more than 380,000 deaths worldwide each year.

Since the Global Polio Eradication Initiative began in 1988, polio cases have dropped by more than 99 percent from an estimated 350,000 in 1988 to fewer than 2000 cases in 2006. More than five million cases of polio paralysis and more than 250,000 polio-related deaths have been prevented due to the eradication initiative. Only four countries – Nigeria, Afghanistan, Pakistan and India – remain polio-endemic, and the United States remains a partner in the ongoing effort to end this crippling disease in these last remaining nations.

World Polio in 1998

World Polio in March 2007

The U.S. is also concerned about the emergence of diseases. That's why the Department of Health and Human Services awarded more than $1 billion in contracts to develop cell-based technology for vaccines against both seasonal and pandemic influenza last year. The benefits are likely to go far beyond U.S. borders – not simply the new vaccines and the disease protection they will convey, but also the advanced techniques for creating them.

Viruses and bacteria are constantly mutating, adapting, and attacking. So it is not sufficient to build an effective vaccine to defeat one disease one time. Rather, it is critical to sustain an infrastructure that allows new vaccines to be developed and new cures to be found.

The infrastructure of adaptability is more than buildings or benches. It is freedom and accountability; competition and transparency. It is the intangible things on which innovation and invention thrive.

The United States leads the world in the discovery and development of new vaccines. Researchers will keep creating new vaccines and passing on their benefits to those in need.

Vaccines offer possibility and opportunity. That's why we'll keep working to expand their availability – to give people a hope, a promise, and a future.

Reaching Every Child

The U.S. Agency for International Development (USAID) has been involved in worldwide efforts to immunize children in developing countries for more than three decades. The agency is also a member of the GAVI Alliance, a public-private global health partnership dedicated to expanding access to vaccines in the world's poorest countries.

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HOLIDAYS

May 1: Maharashtra Day
May 28: Memorial Day

A WORD FROM THE CENTER

Our current issue talks about a global war which affects every country, every family, with the dead and disabled victims far outnumbering casualties of military conflicts. This is the Global War on Microbes. WHO estimates 13 million deaths from infectious disease per year, or 1500 people every hour, which affects developed and developing countries alike. Vaccinations offer hope to billions who want to protect their children and communities from death and disability. The world has scored major victories against smallpox, diphtheria, measles and polio, thanks to unprecedented international cooperation and the efforts of committed governments, healthcare workers, financiers, and parents. The battle is far from won, though. The American Center hopes that this month's issue of the bulletin will inspire thinking about the Global War on Microbes. History has given us hope for the future, but our success will rest on our cooperation, including joint development and use of safe and effective vaccines.

Elizabeth Kauffman
Director

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Knowledge is one thing. The delivery of vaccines to children everywhere is a vastly greater challenge.

Since the 1970s, USAID has worked with partners across the globe to confront that challenge and help immunize children in remote and underdeveloped parts of the world. Over the decades, tens of millions of infants and children have survived the momentary discomfort and dismay of immunization to gain protection from disease.

USAID was a partner in the 1970s campaign to rid the world of smallpox. USAID provided support in the 1980s to the World Health Organization's (WHO) Expanded Immunization Program (EPI), a campaign to expand access to immunization against childhood tuberculosis, polio, diphtheria, pertussis, tetanus, and measles. By 1990, coverage for those six diseases reached 70 percent globally, and the occurrence of those preventable but often fatal illnesses fell dramatically. Even though the news was fairly good at the global level, most of Africa and Asia remained far below the global mark of 70 percent – clearly a problem that needed attention.

In the 1990s, the levels of vaccination among populations leveled off and even declined in some nations. The momentum of the EPI slowed for a variety of reasons, not the least of which was a sense that the job was done. In economically struggling nations, other priorities demanded attention. Major donors turned their attention to other desperate problems.

By 1999, recognition of this reversal of progress led to a new initiative – the formation of the Global Alliance for Vaccines and Immunization (GAVI). It is an alliance devoted to saving children's lives and protecting people's health through the widespread use of vaccines. A powerful alliance of governments, international organizations, vaccine manufacturers, nongovernmental organizations, and public health institutions is devoted to creating a new model for the delivery of international development aid. In pursuit of that goal, GAVI funds programs that strengthen health and immunization systems and accelerate access to new vaccines and new vaccine technologies.

Since inception, donors have committed more than $3 billion to the GAVI fund, and more than $1 billion has already been distributed to nations implementing immunization programs. The GAVI fund has provided multiyear grants to 73 of the world's poorest countries in order to help them build a permanent and sustainable system for delivery of immunization to children.

The United States continues to be one of GAVI's largest donors, having committed more than $350 million since the institution was created. In GAVI's first five years, almost 100 million additional children received new vaccines, with 2006 efforts reaching another 38 million youngsters. WHO estimates that the premature deaths of 2.3 million children have been prevented through the efforts of the GAVI alliance. By reaching so many children in such a short time, GAVI is amplifying its global impact and paving the way for the introduction of future vaccines.

The GAVI alliance now enters a new phase in which we will work toward broader goals to increase global development assistance for health, harmonize the work of the partners with strategies devised by recipient countries, and advance newer, better, and more affordable technologies for the delivery of immunizations and healthcare.

New Technologies and Methods

Considerable success has already been achieved in improving the number of children reached with vaccines. In fact, effective and easy-to-use technologies have been important in the scale-up of developing world vaccination rates in GAVI's first few years. For example, a vaccine against hepatitis B had been available and used for more than 15 years in the developed world before GAVI came into existence. As an alliance with financial backing from its partners, GAVI moved swiftly to make the hepatitis B vaccine available for use in developing countries. Acceptance and adoption of the new GAVI-supported hepatitis B vaccine was astounding – reaching more than 90 million infants in five years – and is one of GAVI's first great success stories. In addition, GAVI was influential in encouraging vaccine manufacturers to combine the hepatitis B vaccine with the established vaccine against diphtheria, typhoid, and pertussis (DTP), allowing immediate inclusion of the new product into existing delivery systems. We are now seeing the fruits of those efforts as new suppliers have entered that market, resulting in substantial price reductions for poor countries.

For years, USAID supported the development and promotion of a special type of syringe known as auto-disable that is quick, convenient, and safe. It can be used only once, thus reducing the danger that immunization could expose patients to HIV or other diseases through syringe reuse. GAVI purchased these devices by the tens of millions to allow a wide introduction of these safe syringes into immunization programs in the world's poorest countries. GAVI provided enough syringes for each country program for three years, and now all countries have taken on the cost of those syringes for routine use in their immunization programs.

GAVI has also had a positive influence on the global business of vaccine production by demonstrating to manufacturers that the developing world can be a profitable market. This activity has thus stimulated additional vaccine supply and reduced prices of some of the GAVI-funded vaccines in a timely manner compared to historical trends.

GAVI wants to be successful in accelerating the delivery of newly formulated vaccines to the developing world. In the past, broad adoption of a new vaccine in poorer nations has lagged as much as 15 to 20 years behind developed nations. In November 2006, the GAVI board approved two such proposals. The decision allows distribution of much newer vaccines, introduced in recent years in the United States and Europe,

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that will combat diseases that together kill an estimated 1.5 million children annually. One new vaccine targets rotavirus, which causes severe and often fatal diarrhea, and the second prevents pneumococcus, a major cause of pneumonia, meningitis, and sepsis.

The two vaccines will be introduced on a staggered scale in a limited number of countries at first to ensure the completion of additional efficacy studies.

Even as the United States is an enthusiastic member of the GAVI alliance, USAID has independently supported a number of parallel initiatives. In addition to the development of the auto-disable syringe, USAID has funded clinical trials for vaccines to be used in developing countries and supported disease-burden assessments. To improve immunization technology, USAID has backed research to create vaccine-vial monitors, which allow vaccines to remain safely outside the cold chain for limited periods of time. This is an important advancement for teams attempting to deliver vaccines to remote villages where refrigeration does not exist or is difficult to maintain in transit.

Current and future research supported by USAID is devoted to development of a vaccine against HIV/AIDS that will be appropriate for use against developing world strains of the disease and under the prevailing conditions of those areas. We are also investing in research to develop a vaccine against malaria, a disease that is rare in the developed world but still takes one million lives in the developing world each year, 75 percent of whom are African children. A vaccine against malaria becomes an evermore critical need with the proliferation of malaria strains resistant to most known drug therapies.

The Potential

Even as USAID, the GAVI alliance, and developing world nations muster new resources and ideas on expanding immunization programs to reach every child, we have learned that the rewards of our efforts could be even greater than we dreamed. A 2005 study from the Harvard School of Public Health showed that the benefits of immunization have been significantly underestimated in the past. Not only does immunization protect children from illness and death at an early age, but it also protects the child from the long-term effects of illness on growth and development. Healthier children do better in school and become more productive and higher-earning adults. In fact, the study's authors equate the value of immunization in a child's life with that of primary education.

Ensuring better health for the world's children is a gift our generation

A health worker examines a child in Faizabad, Afghanistan, at a clinic supplied by USAID whose programs have helped to support routine childhood immunization programs, medical personnel training, and clinic and hospital facilities. USAID PHOTO

NOTES FROM THE AMERICAN LIBRARY

A Select Webliography on Vaccines

http://www.aeras.org/
Aeras Global TB Vaccine Foundation

http://www.aai.org/
The American Association of Immunologists

http://www.apic.org/AM/Template.cfm?Section=Home
Association for Professionals in Infection Control and Epidemiology

http://www.cdc.gov/nip/default.htm
Centers for Disease Control and Prevention – National Immunization Program

http://chavi.org/
Center for HIV-AIDS Vaccine Immunology

http://www.polioeradication.org/
Global Polio Eradication Initiative

http://www.immunize.org/
Immunization Action Coalition

http://www.immunofacts.com/index.asp
The Immunization Gateway: Your Vaccine Fact-Finder

http://www.ivi.org/
International Vaccine Institute

http://www.vaccinesafety.edu/
John Hopkins Bloomberg School of Public Health – Institute for Vaccine Safety

http://www.nfid.org/index.html
National Foundation for Infectious Diseases

http://www3.niaid.nih.gov/
National Institute of Allergy and Infectious Diseases

http://www.vrc.nih.gov/VRC/
National Institutes of Health – Vaccine Research Center

http://www.immunizationinfo.org/
National Network for Immunization Information

http://www.path.org/vaccines_and_immunization.php
PATH – Vaccines and Immunization

http://americanhistory.si.edu/polio/index.htm
Smithsonian – National Museum of Modern History

http://www.unicef.org/immunization/index.html
UNICEF – Immunization Plus

http://www.hhs.gov/nvpo/
United States Department of Health & Human Services – National Vaccine Program Office

http://www.fda.gov/cber/
U.S. Food and Drug Administration – Center for Biologics Evaluation and Research

http://www.who.int/immunization/en
World Health Organization – Immunization, Vaccines and Biologicals

Note: *Internet sites included in this listing, other than those of the U.S. Government, should not be construed as an endorsement of the views contained therein.*

A Quick Strike Against Disease

The Global Network for Neglected Tropical Disease Control is an alliance of the major public-private partnerships devoted to the control of the most prevalent neglected tropical diseases (NTDs) worldwide. The Global Network is advancing a plan to control these diseases through the integrated administration of the "rapid-impact package," so named because the drugs can be quickly deployed with rapid reductions in morbidity and disability, improvement in well-being, and, in some cases, interruption of transmission. The package is comprised of a combination of up to four drugs, all of which have been in use, tested, deployed and utilized by millions for more than a decade. Combining these drugs in an integrated healthcare package is a new approach that de-emphasizes specific tropical diseases and, instead, focuses on neglected populations with multiple tropical infections. Worldwide, there are a total of 56 countries with five or more endemic NTDs. Most of these are in sub-Saharan Africa where the rapid-impact package will be deployed extensively.

This packaging approach has been successful with early childhood vaccines. By packaging a combination of vaccines and inoculating infants against different diseases at the same time, the costs are diminished and the benefits are enhanced.

Identification of the first countries to be included in the Global Network's rapid-impact treatment scheme is currently underway.

The Global Network is based in Washington, D.C.

The World Knows How

The world knows how to immunize its children, and the GAVI alliance strives to provide the leadership and resources to make sure that vaccines are delivered to all the world's children, no matter how remote their homes or how poor their families.

Partners in the GAVI alliance include national governments, from both donor nations and developing countries. Donors currently represented on the GAVI board are France, The Netherlands, Norway, the United Kingdom, and the United States. Developing nation representatives from Armenia, Cambodia, Ethiopia, and Ghana also serve on the board in 2007.

The United Nations Children's Fund, the World Health Organization, and the World Bank are also part of the alliance, along with nongovernmental organizations, such as the Bill and Melinda Gates Foundation and the International Pediatric Association.

Pharmaceutical companies from both the developed and the developing world are partners in the GAVI alliance today, with Merck and Co., Inc., now serving on the board. The vaccine manufacturers participating in this effort produce the greatest share of the world's supply.

Source: http://www.gavialliance.org/index.php

The American Center acknowledges the following web sites in compiling this essay:

http://usinfo.state.gov/journals/itgic/0307/ijge/ijge0307.htm
http://usinfo.state.gov/journals/itgic/0307/ijge/leavitt.htm
http://usinfo.state.gov/journals/itgic/0307/ijge/hill.htm
http://www.gavialliance.org/index.php (Sidebar)
http://usinfo.state.gov/journals/itgic/0307/ijge/stopping.htm (For world polio graphs, enter photo slides and go to last slide by clicking next)
http://usinfo.state.gov/journals/itgic/0307/ijge/hall.htm#strike (Sidebar)

FILMS THIS MONTH

GLOBAL HEALTH

Friday, May 18 ***City of Angels*** (1998, color, 114 mins)

Friday, May 25 ***The Doctor*** (1991, color, 123 mins)

American Center Auditorium **3:30 and 6:30 p.m.**

Is true love worth giving up for immortality? That's the choice facing angel Nicolas Cage in this heartwarming fantasy-drama based on the 1989 German film "Wings of Desire." After seeing surgeon Meg Ryan try to revive a patient whose soul he's come to escort, Cage falls for her and considers "falling" and becoming mortal to be with her. Andre Braugher, Dennis Franz also star.

Gripping and emotional true-life drama stars William Hurt as a successful heart surgeon who gets the chance to find out what life is like on the other side of the scalpel when he discovers he has a throat tumor. Highlighted by superior acting, an insightful script and surprising humor, Randa Haines' film also stars Christine Lahti, Mandy Patinkin, and Elizabeth Perkins.

MUMBAI MONDAYS

A Discussion on
Religion, Faith and Festivals in the Indian-American Community
led by Partap Singh Verma

Monday, May 14
American Center Auditorium **6:00 p.m.**

Since the wave of immigration in the 1970s, Indian-Americans have established many religious institutions representing the major faiths of Southeast Asia. This presentation will explore the various temples, churches, mosques and other religious establishments in the U.S. The presentation will also cover the numerous festivals and events that occur throughout the year and how Indian-Americans stay connected with their Indian heritage and culture.

Partap Singh Verma joined the State Department in January 2006 as an attorney working for the Visa Office in Washington, D.C. and is currently working at the U.S. Consulate General in Mumbai. Prior to joining the State Department, Partap completed his doctorate in law at the Pennsylvania State University and studied at the University of Geneva in Switzerland, and at the University of London, England. Partap also worked in the IT sector and for an environmental lobbying firm for many years. Also, as a legal writer, Partap has been published by the Journal of American Arbitration on World Intellectual Property Organization decisions on Internet domain names. Partap is a native of Washington but has family and strong roots in North India. He speaks Hindi and Spanish and has traveled extensively throughout India and Europe.

Admission to all American Center programs, restricted to persons over 16, will be on a first-come, first-served basis. Please bring the envelope containing this issue of the bulletin for admission (maximum two persons). The auditorium doors will open 30 minutes before the start of the program.

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